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RECORD OF DECISION
FINAL ENVIRONMENTAL IMPACT STATEMENT
Flood Control Master Plan
Clark County Regional Flood Control District

CLARK COUNTY
REGIONAL FLOOD CONTROL DISTRICT

United States Bureau of Land Management
Stateline Resource Area, Las Vegas District
Las Vegas, Nevada

in cooperation with

Department of the Army
Sacramento District Corps of Engineers
Sacramento, California

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RECORD OF DECISION

FINAL ENVIRONMENTAL IMPACT STATEMENT
CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT
FLOOD CONTROL MASTER PLAN

Environmental Impact Statement No. 910106

United States Bureau of Land Management
Stateline Resource Area, Las Vegas District
4765 Vegas Drive
Las Vegas, Nevada 89126

in cooperation with

Department of the Army
Sacramento District Corps of Engineers
650 Capital Mall
Sacramento, California 95814-4794

Recommended by:

Area Manager, Stateline — Date 5/30/91

Ben F. Collins
District Manager, Las Vegas — Date 5/31/91

Approved By:

Billy R. Templeton
State Director, Nevada — Date 6/4/91

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United States Department of the Interior

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IN REPLY REFER TO:

1793 (NV-050)
(NV-933)

Dear Reader:

The Clark County Regional Flood Control District (CCRFCD) has proposed to construct and operate flood control facilities upon Federal land currently managed by the U.S. Bureau of Land Management (BLM). These facilities are included in the CCRFCD's comprehensive Master Plan entitled "Clark County Regional Flood Control District Flood Control Master Plan."

Pursuant to the National Environmental Policy Act (NEPA) of 1969, a Draft Environmental Impact Statement (DEIS) was prepared under the BLM's guidance in cooperation with the U.S. Army Corps of Engineers. The DEIS was circulated for comment in October 1990 and a public hearing was held in Las Vegas, Nevada on November 28, 1990. Comments on the Draft EIS were accepted through December 14, 1990. A total of sixty-nine (69) comments were received by the BLM from the following sources:

1. National Park Service, Lake Mead National Recreation Area
2. USDI Fish and Wildlife Service, Reno, Nevada
3. National Park Service, Western Region
4. U.S. Environmental Protection Agency, Region 1X
5. Nevada State Clearinghouse, Department of Administration
6. Nevada Department of Wildlife
7. Nevada Division of State Lands
8. Nevada Division of Historic Preservation and Archeology
9. Nevada Division of Conservation Districts
10. Nevada Division of Water Planning
11. Nevada Division of Environmental Protection
12. Colorado River Commission of Nevada
13. Las Vegas Valley Water District
14. Department of the Army, South Pacific Division, Corps of Engineers
15. League of Women Voters of Nevada
16. USDI Bureau of Mines
17. USDI Bureau of Reclamation, Lower Colorado Regional Office
18. Clark County A-95 Clearinghouse Council

Each comment was carefully considered and, as appropriate, the DEIS document was revised accordingly. A copy of the Abbreviated Final is enclosed for your information. This Abbreviated Final, is to be used in conjunction with the DEIS and fulfills the BLM's requirements under NEPA. For convenience, changes made to the text of the DEIS are shown as shaded areas on your copy of the Abbreviated Final.

The proposed action will not be implemented until thirty (30) days following the Environmental Protection Agency's notice of the Final EIS in the Federal Register. The Record of Decision will be issued following the above mentioned thirty (30) day period.

Sincerely,

Billy R. Templeton

Billy R. Templeton
State Director, Nevada

DECISION

I approve Clark County Regional Flood Control District's proposed action (Detention/Conveyance System) for the implementation of their Flood Control Master Plan, along with the stipulations and mitigating measures as specified within this Record of Decision (ROD). Approval of this action includes my decision to grant rights-of-way to construct, operate and maintain those Detention/Conveyance alternative facilities identified in the Final Environmental Impact Statement (FEIS) with stipulations, as identified within this ROD, and with the following exceptions:

1. All or portions of facilities 7, 8 and 10 on Figure A2-1; 1 and 9 on Figure A2-2; and 1, 2 and 3 on Figure A2-13 are located within Wilderness Study Areas (WSAs). Facilities identified in Figure A2-1 are within the Quail Spring WSA (NV-050-411), those identified in Figure A2-2 lie within Nellis C WSA (NV-050-4R-15C) and those identified in Figure A2-13 are within LaMadre Mountains WSA (NV-050-412). All actions proposed within WSAs must meet the nonimpairment criteria in the Interim Management Policy (IMP), and if the criteria cannot be met, as is the case with these facilities, the proposed actions must be denied. The IMP is valid until Congress makes a decision regarding the designation or release of the subject lands.

2. Facilities 1 thru 6 on Figure A2-13 are located partially or wholly within the Red Rock Canyon National Conservation Area (RRCNCA). These facilities are not compatible with the mandate for management of the RRCNCA and therefore rights-of-way will not be approved.

Further, it is the intent of the BLM to eventually transfer public lands, upon which flood control facilities are constructed, to the local government entities through the appropriate land disposal mechanism.

NEED FOR ACTION

In response to major floods in 1983 and 1984, the Clark County Regional Flood Control District (CCRFCD) was established in 1985 to develop a regional flood control program for the Las Vegas Valley and surrounding environs. As part of the CCRFCD mandate, a comprehensive, regional Master Plan was prepared entitled "Clark County Regional Flood Control District Flood Control Master Plan".

The principal objective of the Master Plan is to provide for the long-term improvement in public safety and property damage protection from flooding events by guiding the siting, design, and installation of flood control facilities to promote the effective functioning of the entire system.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The proposed action and alternatives are described in the following documents which are incorporated by reference:

> Clark County Regional Flood Control District Flood Control Master Plan Environmental Impact Statement (BLM, 1991)
>
> U.S. Fish and Wildlife Service Biological Opinion (August 29, 1990)

The FEIS addresses three principal project alternatives; the Detention/Conveyance, All Conveyance, and the No Project alternatives. The Detention/Conveyance alternative was adopted by the CCRFCD as the proposed flood control program based on its flexibility, reliability, and affordability. In addition, the Detention/Conveyance alternative will allow construction of presently needed upslope facilities, unlike the All Conveyance alternative which would have to be built starting in the valley bottom.

The only other alternative considered was the Detention/Conveyance Alternative #3 in the Central Las Vegas Valley. This alternative was the same as the proposed action (Detention/Conveyance Alternative) in the areas upstream of the Angel Park and Gowan Detention basins. However, each of these basins would have had its own discharge outfall system under this alternative. This alternative would have resulted in lower detention requirements at the Gowan Detention System, but would have required two additional small detention basins. This alternative was very similar to the proposed action in terms of; flexibility to accommodate changing administrative and development related conditions; degree of reliability and; multi-use potential. However, the planning and construction costs of this alternative would be considerably higher than the proposed action, and therefore was eliminated from further consideration.

The Detention/Conveyance system, as described and analyzed in the FEIS is the selected alternative. Components of the selected alternative include the following:

> The selected alternative is characterized by a series of detention basins located around the perimeter of currently urbanized areas. These basins and associated dikes are designed to collect flood flows and release the flows at metered rates that can be handled by downstream conveyance facilities.
>
> Flows from the basins are conveyed to the Las Vegas Wash through a series of conveyance facilities including lined and unlined channels, pipelines, and conduits. Because the velocity of the flows is reduced and release rates are metered, flows can be managed using smaller conveyance facilities than would be required with the All Conveyance alternative. In most cases these flows can be handled by existing facilities with little or no major capacity improvements. Because of the reduced flows there is greater flexibility in interchanging different types of facilities to handle predicted flows. By reducing flow rates, the potential for downstream scouring and erosion is also reduced, resulting in enhanced protection of wetlands and areas with perennial flows.
>
> The Detention/Conveyance alternative is composed of approximately 48 miles of dikes. Four miles, or 9.2 percent more linear feet of dikes will be constructed under this alternative than would be required under the All Conveyance alternative. Dikes are used to collect flood flows and convey them to detention basins for metered releases. In general, dikes vary considerably in size. Many of the dikes proposed range from 1.0 to 1.5 miles in length with most being a minimum of 1,000 feet in length.
>
> Included in the selected alternative are 53 detention basins and 16 debris basins covering a total of 2,155 acres. The average size of a detention basin is 37.74 acres and a debris basin 9.69 acres. The total acreage used to construct basins is slightly over double the acreage required in the All Conveyance alternative.
>
> The Detention/Conveyance alternative utilizes 197 miles of channel. The size of lined and unlined channels is much smaller for the selected alternative than for the All Conveyance alternative. The All Conveyance channels are often substantially wider in order to convey increased flood flows. Channels can be two to ten times greater in width.
>
> A total of 42 miles of existing floodways are proposed to be utilized under the selected alternative. Many of these floodways contain wetland areas.
>
> Under the selected alternative 105 miles of pipeline and box conduits will be used. In general, pipelines and box conduits will be used in urban areas where excavation of channels is not feasible. In addition, 122 bridges and box culverts will be utilized.
>
> As presently estimated, it will require 59 years to construct the Detention/Conveyance alternative. Because of the configuration of the system, initial activities would focus on construction of the upstream dikes and detention basins necessary to convey and reduce flood flows to levels that can be accommodated by existing and upgraded downstream facilities.

The second flood control system addressed in the FEIS is the All Conveyance alternative. Components of this alternative include the following:

The All Conveyance alternative is composed of a series of structures and facilities designed to collect stormwater and convey it out of the area. The system consists of a series of interrelated dikes, lined and unlined channels, floodways, pipeline conduits, bridges and boxes, detention basins, and debris basins located throughout the valley.

The major characteristic distinguishing this alternative from the Detention/Conveyance alternative is that channels have sufficient capacity to convey flows to the Lower Las Vegas Wash at any location in the system. As a result, the All Conveyance system is better suited to handle flood flows resulting from localized storms downstream of flow collecting dikes and detention basins. In most instances, larger channels, pipelines, and conduits are necessary to convey these flows.

Facilities to be constructed under this alternative include 44 miles of dikes, 238 miles of lined and unlined channels, 34 miles of floodways, 99 miles of pipelines and conduits, 182 bridges and box culverts, 6 detention basins and 28 debris basins. Although existing channels and flow paths are used to the extent possible, massive replacement of existing channels and bridges is usually required.

Construction of the All Conveyance alternative is projected to require 97 years based on estimated available funds. The increased time required over the Detention/Conveyance alternative is due to the higher construction costs associated with numerous, larger bridges.

Since operation of the system depends on the ability of downstream conveyances to handle increased flood flows, construction activities would tend to move from downstream to upstream locations. As a result many areas would not experience improved flood protection until the downstream facilities are in place.

Under the No Project alternative no flood control facilities would be constructed under the auspices of the CCRFCD. However, facilities would continue to be built by local developers and by local municipalities without consideration of a system of integrated and standardized facilities. Under this alternative, flood episodes would likely become more severe as urban growth continues, resulting in greater property damage and loss of life.

The U.S. Army Corps of Engineers (COE) is evaluating the feasibility of designing and constructing flood control facilities along the Tropicana and Flamingo washes in the Las Vegas Valley. These future projects, if implemented by the COE would constitute a more intensive variation to the types of facilities envisioned in the CCRFCD's Master Plan. The Master Plan has been designed to accommodate more intensive future projects (such as those being evaluated by the COE) and the impacts of any such projects would be evaluated at the time specific plans are proposed. These second-tier environmental analyses would be prepared by the COE (or other project sponsors) in accordance with the project-specific guidance provided in Section 14 of the FEIS.

MANAGEMENT CONSIDERATIONS

My decision to approve the CCRFCD's proposed project rights-of-way as mitigated and monitored will not result in unnecessary degradation. After close examination of the findings of the FEIS and consultation with the U.S. Fish and Wildlife Service (USF&WS), COE and the Nevada State Historical Preservation Officer (SHPO), the proposed action, as mitigated, is consistent with major public land issues and is considered the environmentally preferred alternative. Mitigation measures have been adopted to ensure that all reasonable means to avoid or reduce environmental harm have been incorporated into the proposed project. A summary of the management considerations, which includes a comparison of alternatives, is presented below.

Ground Water

Proposed lining of channels and box conduits may result in a minor reduction in recharge to the shallow aquifer or possibly other aquifers. However, such a reduction in recharge is inferred to be an insignificant amount of total recharge in the area.

Any potential decrease in recharge to aquifers that might occur due to lining of channels would likely be offset by increased recharge to aquifers through percolation at unlined detention facilities. Therefore, the effects of the proposed facilities on recharge to the shallow aquifer or other aquifers are considered to be insignificant.

Recharge of principal aquifers used for local water supplies would not be affected, since recharge of these aquifers mainly occurs in surrounding mountains.

Proposed lining of channels or washes may potentially restrict discharge of ground water from the shallow aquifer. Such restrictions may result in a significant increase in water levels within the shallow aquifer in the vicinity of the lined channel. This could result in:

> Geotechnical problems including damage to foundations or seepage into subsurface structures such as parking garages.
>
> Damaged root systems in landscaped areas due to a rise in water level of poor quality ground water.
>
> Increased potential for discharge of poor quality shallow ground water to underlying aquifers due to increased head from a water level rise.
>
> Decreased baseflow downstream, which may potentially impact wetland vegetation in areas such as lower Las Vegas Wash.

Because of the uncertainty in predicting the amount of water level rise which could occur due to channel lining, potential impacts associated with such a rise should be considered potentially significant unless appropriate mitigation measures identified in the FEIS are incorporated into project design.

There is no significant difference in impacts associated with either the All Conveyance or the Detention/Conveyance alternative. The No Project alternative will not result in any environmental impacts to the groundwater resource.

Through the application of the programmatic mitigation measures, contained in Section 6 and Table ES-1 of the FEIS, and any additional measures deemed necessary through individual project analysis, adverse impacts associated with the ground water resource would be minimized or eliminated. The mitigation implementation procedures identified in Section 14 of the FEIS will be used during the planning and implementation of individual flood control facilities. These will be used to determine if significant impacts could occur due to the construction and operation of each individual facility, and what (if any) mitigation measures are necessary to minimize or eliminate adverse impacts.

Surface Water

Impacts during construction could be significant especially if a storm occurs during the construction period. Such impacts could include: disruption of domestic water and sewage collection systems and waste water treatment plants, increased potential for erosion; and introduction of petroleum products and debris into runoff waters. In general, the construction process can significantly increase the potential for degradation of surface waters which are exposed to the construction area. These impacts will be temporary and can be significantly mitigated through proper design and construction.

Operation of flood control facilities will probably result in significant changes in how storm water runoff is routed. Water flowing over the surface should be at shallow depths except in those areas of concentration where control facilities have been constructed. At these areas flow depth and velocity may be more hazardous than before the facility was constructed. Along reaches where upstream detention is available, peak flow rates should be lower. Generally for open channels, increases in flow rate are associated with more hazardous conditions and decreases in flow rate are associated with less hazardous conditions. Impacts on sediment transport can also be expected to occur. Detention facilities will settle out much of the sediment entering the facility and discharge much cleaner water. This cleaner water will then result in possible increased erosional processes downslope as will increases in flow velocities such as those resulting from water exiting lined channels. Increased velocities and resultant erosional increases can also be expected from areas witnessing increases in slope. None of the 10-year plan facilities will result in an increase in flow rate over the current situation, therefore, no increase in erosion and resultant sedimentation is anticipated.

Increases in infiltration rates, caused by the installation of flood control facilities, could result in a reduction of the runoff reaching Lake Mead and ultimately may raise a water rights concern within the Colorado River system.

Implementation of the Master Plan will result in a reduction in size of the floodplain boundary below detention facilities. While certain resource values such as intermittent wetlands and some biological habitat will be lost, the overall beneficial impact on existing and planned developments in the original floodplain will be significant. Executive Order 11988 requires action to "reduce the risk of flood loss" and to "minimize the impact of floods on human safety, health and welfare." Although the proposed action will result in the aforementioned losses, the improved protection outweighs such losses.

Except for differences in impacts to perennial low flows and storm water runoff, impacts associated with the Detention/Conveyance and All Conveyance alternative are similar. Unlike the All Conveyance system, the Detention/Conveyance system will result in some modification of the current perennial low flow regime. The All Conveyance system, unlike the Detention/Conveyance system, will exhibit greater storm water flow rates. The Detention/Conveyance system, through the use of detention basins, will impound flood waters and release them into the conveyance system at much smaller metered rates.

The No Project alternative would not affect the current surface water regime. Under this alternative, however, flood episodes would likely become more severe as urban growth continues due to the lack of an integrated and standardized flood control system.

Through the application of the programmatic mitigation measures, contained in Section 7 and Table ES-1 of the FEIS, and any additional measures deemed necessary through individual project analysis, adverse impacts associated with the surface water resource would be minimized or eliminated. The mitigation implementation procedures identified in Section 14 of the FEIS will be used during the planning and implementation of individual flood control facilities. These will be used to determine if significant impacts could occur due to the construction and operation of each individual facility, and what (if any) mitigation measures are necessary to minimize or eliminate adverse impacts. The afore mentioned impacts are primarily associated with engineering details of the facilities. Proper engineering practices are expected to minimize or eliminate potential adverse impacts. Further environmental analysis will be required for those facilities exhibiting the need for extra design considerations. In the case of wetlands, if significant impacts are identified, mitigation measures will be identified as part of the COE Section 404 permitting process.

Air Quality

Internal combustion engines used during construction activities would emit volatile organic compounds, nitrogen oxides, sulfur dioxide, carbon monoxide, suspended particulate matter, trace amounts of aldehyde, benzene and lead emissions would also result from combustion of leaded and unleaded fuels. These emissions are expected to be less than significant under most circumstances, but may be considered significant in areas already exceeding carbon monoxide and total suspended particulate standards and when inversion layers are prominent. Trucks and automobiles used at the project site and traveling to and from the site would also emit similar pollutants. Fugitive dust would be emitted from earth/soil disturbing activities, such as clearing, grading, and use of unpaved surfaces for vehicle travel. The proposed action (Detention/Conveyance Alternative) will be less impacting than the All

Conveyance Alternative due to less construction activity and, the fact that major earthwork will occur primarily at detention basin sites located far from the existing developed areas in the Las Vegas Valley.

Overall, emissions associated with the operation of the proposed action are considered to be minor. Facility maintenance activities during project operation require sediment and debris removal from the detention basins and debris basins once every eight to ten years. Although this activity will result in more sediment and associated fugitive particulate matter emissions under the proposed action emissions associated with operation of the facilities is considered to be small. Carbon monoxide emissions from vehicle and equipment operation associated with facility maintenance, will represent a very minor component of the basin-wide emissions inventory.

Air quality impacts associated with the No Project alternative could be associated with traffic congestion and major repair activities following flood events that could be significant on a short-term basis, but are probably not significant in the long-term. Although flood-related constraints to development would not be eliminated, growth in the valley in the recent past suggests that this constraint does not effectively limit growth. As a result, this alternative is not expected to result in any cumulative air quality impacts.

Through the application of the programmatic mitigation measures, contained in Section 4 and Table ES-1 of the FEIS, and any additional measures deemed necessary through individual project analysis, adverse impacts associated with the air resource would be minimized or eliminated. The mitigation implementation procedures identified in Section 14 of the FEIS will be used during the planning and implementation of individual flood control facilities. These will be used to determine if significant impacts could occur due to the construction and operation of each individual facility, and what (if any) mitigation measures are necessary to minimize or eliminate adverse impacts.

Terrestrial and Aquatic Biology

The proposed action can be expected to impact vegetation at varying degrees. The loss of upland vegetation types by construction would create adverse but nonsignificant impacts. The loss of wetlands vegetation types will result in adverse and potentially significant impacts but can be reduced by: the compensating effects of newly created wetlands in detention basins and enhanced wetland quality in engineered floodways; and implementation of project-specific mitigation measures as identified in the FEIS. There are basically two types of wetland vegetation within the Las Vegas Valley; desert marsh and desert wash scrub. If all of the flood control facilities are constructed, a total of 103.6 acres of desert wash scrub and 14.5 acres of desert marsh will be disturbed. A total of 53.6 acres of the desert wash scrub and 7.2 acres of desert marsh is expected to be permanently disturbed.

The above impacts could potentially affect sensitive plant species in both upland and wetland habitats. Individual species would be affected in the same manner as the vegetation types in which they occur. The rarity and protection status of these plants vary greatly but no federally-listed plant species will be affected. Loss of large populations of sensitive plants, particularly state-listed plants, would be a potentially significant adverse impact due to rarity and protected status of such plants. The significance of the impact would depend on the size and areal extent of populations potentially affected. Implementation of mitigation measures identified in the FEIS will minimize the loss of most sensitive species and could reduce the significance of impacts.

The operation and maintenance of the proposed facilities after construction could result in impacts, including the degradation of wetland vegetation due to upstream diversion of flood waters; disturbance of wetland vegetation in downstream areas associated with increased flood flow due to channelization of streams and washes; creation of new, or expansion of existing wetlands in some areas; establishment of weedy vegetation; routine maintenance disturbance associated with vegetation clearing, sediment removal and herbicide application; and loss of sensitive plants due to upstream diversion of flood waters, increased flood flow rates, and/or routine maintenance disturbance.

Sensitive plant species may also be impacted by the operation and maintenance of flood control facilities. Because most of these plants occur in upland areas, impacts to wetlands associated with upstream diversion of flood waters, as well as increased velocities of flood flows will have little impact on sensitive species. Plants that sometimes occur within natural watercourses may be affected on a limited basis. Overall, impacts to sensitive plant species due to upstream diversion of water and increased velocities of flood flows are not expected to be significant. Routine clearing of vegetation in some facilities and access to all structures for maintenance activities could have a direct impact to sensitive species. Because clearing of vegetation and removal of sedimentation would occur mostly in flood channels, floodways and detention basins, sensitive species that may occur in natural watercourses are most likely to be affected. Impacts to sensitive plant species due to the operation and maintenance of other structures is not expected to be significant.

In general, the impacts associated with construction activities are expected to be minimal in the case of nonsensitive wildlife species. Habitat disturbance is expected to be small when compared to the total habitat of the valley, localized and disturbed areas will revegetate following construction activities. Types of impacts could include: direct loss or displacement of individual animals; direct disturbance or loss of wildlife habitats at facility sites; direct loss of important habitat features; creation of beneficial wetlands in floodways and unlined channels; creation of undesirable, weedy habitats; and possible habitat fragmentation associated with the construction of linear features.

Operation and maintenance impacts on nonsensitive wildlife species can be expected to vary from minimally adverse to potentially significant, depending on the location, as well as the amount and type of habitat involved. As a result of diversion of runoff water above natural watercourses some of the wetlands downstream could become degraded over time due to reduced water supplies and thereby pose potentially significant impacts to diverse and regionally significant fauna. Increased flood flow rates caused by channelization of streams and washes could potentially prohibit the reestablishment of wetlands or creation of wetlands in unlined channels. This loss of wetlands habitat as a result of increased velocities would be a potentially significant impact. Conversely, the reduction in flow velocities and retention of water caused by flood control facilities could potentially enhance, or expand existing, desirable wetland habitats in engineered floodways. For example, the reduction of flow rate in the lower Las Vegas Wash could potentially result in temporary retention of water over a greater area, and thus, expand the existing wetland.

Sensitive wildlife species most likely to be adversely affected by construction and operation of flood control facilities include desert tortoise, Gila monster, kit fox and game birds. Potential direct impacts include removal of suitable habitat and loss of individuals. Construction of linear lined flood channels could result in fragmentation of habitat by presenting obstacles to movement. Losses of individuals could potentially occur due to collisions or crushing by vehicles and equipment. Both these impacts are considered to be potentially significant. However, implementation of appropriate mitigation measures, including off-site compensation, will minimize the loss of species and reduce impacts. As a result of the implementation of the 10-year plan facilities, an estimated 1,620 acres of desert tortoise habitat are likely to be disturbed, including 1,292 acres of permanent disturbance and 328 acres of long-term, temporary disturbance.

Both the Detention /Conveyance and All Conveyance alternatives are expected to affect the same biological resources due to construction and operation of the facilities. The magnitude of the impacts will differ however.

The proposed action will result in twenty-one percent less linear disturbance than the All Conveyance alternative due to fewer and narrower flood channels (197 miles versus 238 miles of channel).

Construction of the proposed action will result in nearly twice the amount of temporary and permanent habitat disturbance as would occur with the All Conveyance alternative (2155 acres versus 1057 acres).

Despite less disturbance of the All Conveyance alternative, potential impacts to the desert tortoise could be greater. Although there will be a larger acreage disturbance at the basin sites of the proposed action the All Conveyance alternative, utilizing more miles of channels, will result in more linear disturbance of tortoise habitat and a greater potential to present barriers to tortoise movement. These linear facilities would impact the high estimated tortoise densities of the Southwest Las Vegas and Boulder City subareas. Differences between the two alternatives would probably not result in relative differences in the magnitude and scale of impacts to tortoises for the rest of the project area. There is a possibility that the No Project alternative would ultimately result in more significant impacts than the proposed or All Conveyance alternatives. Flood control facilities would be constructed with each new development in a much less coordinated and programmatic fashion. Therefore, there would be a wide variation in the nature, size and efficiency of these facilities. The level of environmental protection would not be based on an understanding of the regional impacts and therefore the mitigation measures identified in the EIS would not be implemented.

The No Project alternative could also result in major adverse impacts to the Las Vegas Wash. Nearly 80 percent of the wetlands in the wash have been lost due to unchecked erosion. This erosion is expected to continue unless flood control structures are installed to alter the existing hydrologic regime. Continued loss of wetlands would represent a decrease in habitat for aquatic and wetlands-associated plants and wildlife.

Through the application of the programmatic mitigation measures, contained in Section 8 and Table ES-1 of the FEIS, and any additional measures deemed necessary through individual project analysis, adverse impacts associated with the terrestrial and aquatic biology resource would be minimized or eliminated. The mitigation implementation procedures identified in Section 14 of the FEIS will be used during the planning and implementation of individual flood control facilities. These will be used to determine if significant impacts could occur due to the construction and operation of each individual facility, and what (if any) mitigation measures are necessary to minimize or eliminate adverse impacts. In the case of wetland habitat, if significant impacts are identified, mitigation measures will also be identified as part of the COE Section 404 permitting process.

As part of the Environmental Impact Statement, the U.S. Fish and Wildlife Service (USF&WS) was consulted as required under Section 7 of the Endangered Species Act of 1973, as Amended. The resultant Biological Opinion is included as Section 3 of the FEIS. It is the USF&WS's Opinion that the proposed action will not result in jeopardy to the desert tortoise. As part of this Record of Decision the various mitigation and monitoring requirements in the Biological Opinion are adopted as stipulations.

Cultural Resources

Earth moving required for the construction of project facilities and ancillary disturbances could cause the destruction or loss of cultural materials or the disruption of their integrity with respect to their archaeological context. Design and construction of project facilities may create aural and visual intrusions resulting in adverse impacts to the integrity of historic and cultural settings. This is normally a problem only for sites with architectural, aesthetic, or high cultural values and those with strong associations with important events or people.

During operation, periodic flooding and detention of water in detention basins not requiring subsurface excavation or behind dikes or levees would create an alternating wet-dry regime, highly destructive of organic materials and could result in increased erosion. As a result of maintenance activities disturbance of cultural resources is a possibility.

In remote areas, construction of new maintenance access roads may open previously inaccessible resources to increased impact from recreational activities and unauthorized artifact collection. Because of facilities close proximity to Las Vegas where existing access is generally good, creation of new areas associated with the flood control facilities is likely to have only marginal additional impact.

A BLM Class III cultural resource survey was conducted for all areas within the Area of Potential Effect (APE). As a result of the survey, no cultural resources eligible for nomination to the National Register of Historical Places were found, and a determination of "no effect" for the project was submitted from BLM to the Nevada SHPO. The SHPO concurred with the "no effect" determination (May 13, 1991).

Through the application of the programmatic mitigation measures, contained in Section 12 and Table ES-1 of the FEIS, and any additional measures deemed necessary through individual project analysis, adverse impacts associated with the cultural resource would be minimized or eliminated. The mitigation implementation procedures identified in Section 14 of the FEIS will be used during the planning and implementation of individual flood control facilities. These will be used to determine if significant impacts could occur due to the construction and operation of each individual facility, and what (if any) mitigation measures are necessary to minimize or eliminate adverse impacts. Potential impacts to cultural resources are considered and will be minimized through the National Historic Preservation Act, Section 106 consultation process as described in 36 CFR 800.

Mineral Resources

Both the proposed action and the All Conveyance alternative are expected to create similar impacts due to construction and operation of the project. Although most environmental impacts are the same for these two alternatives, adverse impact to mineral resource production is greater with the proposed action than with the All Conveyance alternative.

Five of the proposed flood control facilities (facility 13 on Figure A2-7; 55 on Figure A2-4; 4 and 14 on Figure A2-11; and 8 on Figure A2-2) are located on or adjacent to existing gravel pits. Use of these pits as detention facilities will preclude pit operations. With the exception of the Materials Site proposed for a detention basin (facility 14 on Figure A2-11), the impacted pits are presently inactive and do not represent unique features or rare mineral resources that are not found elsewhere in the project area. The removal of these pits from use is therefore not expected to create a significant environmental impact. Fair compensation to claimants and/or permittees will be required prior to the installation of facilities in these areas if claims cannot be declared null-and-void or if the claims can pass a validity examination and permits cannot be canceled.

The No Project alternative would not create any new impacts to the geologic environment beyond the existing impacts related to the current flood control facilities or lack thereof.

Through the application of the programmatic mitigation measures, contained in Section 5 and Table ES-1 of the FEIS, and any additional measures deemed necessary through individual project analysis, adverse impacts associated with the mineral resource would be minimized or eliminated. The mitigation implementation procedures identified in Section 14 of the FEIS will be used during the planning and implementation of individual flood control facilities. These will be used to determine if significant impacts could occur due to the construction and operation of each individual facility, and what (if any) mitigation measures are necessary to minimize or eliminate adverse impacts.

Visual Resources

The potential impacts which would occur during the construction of the proposed flood control facilities are primarily due to the initial disturbance of the existing landscape setting. Excavation will expose different colors and textures of the soil causing impacts to the existing visual character of the setting as would the production of airborne dust. These impacts generally apply to short-term situations and can be mitigated as identified within the FEIS.

Once constructed, the various structures will result in varying degrees of impact upon the visual character of the landscape. Considering the higher level of dominance for the detention basins, the ability of these structures to be absorbed is relatively low. The size of the structures increase the potential for dominating the urban and natural characters for both adjacent and distant views. Most of the major detention basins are located outside existing developed urban areas, which may help mitigate impacts to some degree. Channels are considered to be visually intrusive. The smaller scale of the channels planned in the proposed action may reduce their dominance and result in improved visual absorption of these facilities.

The major difference between the proposed action and the All Conveyance alternative involves the use of detention basins in the case of the former. Considering the higher level of dominance for the detention basins, the ability of these structures to be absorbed is relatively low. The size of the structures increase the potential for dominating the urban and natural character for adjacent and distant views. Most of the major detention basins are located outside existing developed urban areas, which will help mitigate impacts to some degree. Channels associated with this alternative are generally smaller than those associated with the All Conveyance alternative and therefore can be expected to be somewhat less dominant and absorbed more readily.

The larger channels associated with the All Conveyance alternative would primarily impact distant views. Constructing larger channels and extensive dikes and levees could increase the amount of soil excavation for long linear distances as well as introduce extensive open concrete areas.

The No Project alternative will not directly impact the short term visual character of the area. Because developers will, over time, most likely install flood control facilities similar to those incorporated in the All Conveyance alternative, local visual impacts would be similar to the impacts of the All Conveyance alternative, but regional-scale impacts would be somewhat less due to the discontinuous nature of these new facilities and lack of new flood control structures in areas outside of major new developments.

Through the application of the programmatic mitigation measures, contained in Section 10 and Table ES-1 of the FEIS, and any additional measures deemed necessary through individual project analysis, adverse impacts associated with the visual resource would be minimized or eliminated. The mitigation implementation procedures identified in Section 14 of the FEIS will be used during the planning and implementation of individual flood control facilities. These will be used to determine if significant impacts could occur due to the construction and operation of each individual facility, and what (if any) mitigation measures are necessary to minimize or eliminate adverse impacts.

Land Use

Both during construction and operation of the flood control facilities major impacts will occur to existing residential, commercial, educational, and emergency response facilities. Impacts upon these resources are potentially significant because their normal use and operation could be significantly disrupted by development and operation of the proposed facilities. Barriers may be created between portions of residential neighborhoods, between residences and schools, or between neighborhoods and emergency response facilities. If located adjacent to existing residential neighborhoods, these areas will be directly impacted if the right-of-way requires portions of land presently used for other purposes, or proposed for other purposes. Where facilities cannot be located to avoid land use conflicts, elimination or division of existing uses may occur. Mitigation measures are proposed within the FEIS that should effectively reduce the level of these impacts. A significant beneficial impact to all land uses will be the improved flood protection afforded by the flood control facilities.

To a lesser degree, recreational, agricultural and livestock grazing use could be impacted. Livestock grazing could potentially be impacted if barriers separated portions of a continuous allotments. However, given the size, current designation and lack of livestock grazing in the last ten to twenty years, such impacts are considered minimal.

With respect to land use , the proposed action would have generally greater levels of impact than the All Conveyance alternative due to the areal extent of the basins, where the detention basins are located in areas of urban development. Because the major detention basins are located in currently undeveloped areas, adverse impacts associated with these structures is considered to be minimal. The relative impacts of conveyance facilities would be lower for the proposed action as a result of the narrower rights-of-way required. Overall, the total amount of developable land involved appears to be greater with the All Conveyance alternative. The major land requirements of the proposed action are associated with detention basins in undeveloped outlying areas and floodways associated with major drainages presently prone to flood events. Land requirements within the existing developed portions of the valley would be less with the proposed action.

The No Project alternative would not affect current land use patterns or opportunities. It also does not provide any additional flood protection, which is considered a significant beneficial impact.

Through the application of the programmatic mitigation measures, contained in Section 9 and Table ES-1 of the FEIS, and any additional measures deemed necessary through individual project analysis, adverse impacts associated with land use would be minimized or eliminated. The mitigation implementation procedures identified in Section 14 of the FEIS will be used during the planning and implementation of individual flood control facilities. These will be used to determine if significant impacts could occur due to the construction and operation of each individual facility, and what (if any) mitigation measures are necessary to minimize or eliminate adverse impacts.

Socioeconomics

In general, socioeconomic impacts would not represent a major criterion for choosing between the Detention/Conveyance or All Conveyance alternatives, nor would the cumulative effects of the projects in terms of adverse impacts be a criterion for selection of one or the other. The potentials for localized negative impacts are very low, given the criteria (Table 11-14 of the FEIS) for prioritization of program elements, while the positive effects would be widely diffused.

Because the source of funds is a sales tax which includes substantial reserves from non-resident expenditures, possible federal funding support, and expenditures primarily associated with local labor and construction materials, adverse impacts associated with local government expenditures are not considered significant. These expenditures may result in positive, but generally not significant effects on local employment and sales. Beneficial effects are small and generally not significant when considered in the context of the economy of the entire Las Vegas Valley. The beneficial effects would be, however, greater for the All Conveyance alternative due to its higher cost. While the proposed action will require large areas of land for detention basins, the channels to convey storm runoff would be narrower than those required for the All Conveyance alternative. The narrower channels will cause less disruption to existing land uses in urban areas. Detention basin locations are proposed for land that is currently vacant or undeveloped. Therefore, the socioeconomic implications of compensating or relocating displaced businesses or residences would be smaller for the proposed action than for the All Conveyances alternative.

Flood control facilities may affect the value of some properties. Property values are expected to increase in both developed and undeveloped areas. The increases, however, would be limited to properties immediately adjacent to the facilities or properties whose flood insurance costs decrease as a result of reduced flooding risks.

The No Project alternative would not commit local governments to a major capital program and would not directly generate the beneficial effects identified for the other two alternatives. Local government expenditures for facility repair following flood events and emergency services during flood events will probably be higher. These activities may not be funded through a sales tax surcharge or federal funds and therefore may result in an overall net negative impact.

MITIGATION AND MONITORING

As previously identified in the MANAGEMENT CONSIDERATIONS section of this ROD, all mitigation measures contained in the FEIS are adopted and will be, along with any additional measures deemed necessary, developed into stipulations to the permits and rights-of-way grants for the various individual components of the project. All practicable means to avoid or minimize environmental harm from the selected alternative will be adopted. Monitoring and enforcement programs will be required under the specific permits and rights-of-way. Because the FEIS encompasses not only lands administered by the Bureau of Land Management (BLM) but also other entities, annual progress meetings between the BLM's Authorizing Officer, COE, CCRFCD and those entities in which projects are constructed, will be conducted in order to ascertain compliance with all mitigation and stipulations. In order to ensure that project impacts are reduced through proper implementation, on other than public lands, the CCRFCD will administer the programmatic application of site-specific mitigation measures (see Stipulation No.2).

STIPULATIONS

1. The FEIS utilizes a programmatic approach to identify and analyze potential impacts. In addition to containing an overall analysis of the entire Clark County Regional Flood Control District Flood Control Master Plan, it also contains a more specific analysis of the CCRFCD's proposed 10-year construction program. For those projects not included in the 10-year plan and those contained in the 10-year plan but found to present unanticipated impacts, further environmental documentation may be necessary. This determination will be made on a site-by-site basis as outlined in Section 14 of the FEIS.

2. Proper implementation is essential to reducing project impacts. The CCRFCD will, on other than public lands, administer the programmatic application of site-specific analyses and mitigation measures to ensure that all objectives are achieved. The CCRFCD and BLM have agreed that the CCRFCD will, as a condition of funding projects within an entity, require that entity to comply specifically with both the letter and intent of the mitigation measures and stipulations identified in the EIS. This includes those processes necessary to comply with all applicable local, state and federal laws and regulations, including NEPA. On those projects involving BLM permits and/or rights-of-way, BLM will maintain lead responsibility for site-specific NEPA and regulatory compliance.

3. If any modifications are made to the placement and/or design of any individual facility, as identified in the FEIS, an existing data review and evaluative survey must be conducted and Section 106 consultation, as described in 36 CFR 800, completed prior to approval of a right-of-way.

4. The Paleontology resources of the Las Vegas Valley were not initially identified for inclusion in the FEIS. This resource is considered to be significant and warrants analysis and mitigation. In order to meet this need it will be necessary to handle this resource outside the FEIS.

A Work Plan has been submitted and approved by BLM. This plan requires a pre-field literature and records review; and formulation of a field assessment strategy. Once this pre-field effort is completed a fieldwork authorization is to be submitted by the District to the BLM. This submission must legally describe those areas of high probability for paleontological occurrences requiring on the ground inventory and evaluation. Once BLM approves the fieldwork authorization, a technical report is to be prepared, by the CCRFCD. The report will assess the results of pre-field research and field survey as well as present an impact mitigation plan.

5. On BLM administered lands, sand and gravel excavated during construction of flood control facilities will be made available at BLM's discretion. Disposal of these excess materials may be accomplished through Material Site Rights-of-Way, Free Use Permits or Material Sales Contracts.

6. The USF&WS was consulted as required under Section 7 of the Endangered Species Act of 1973, as Amended. The resultant Biological Opinion is included as Section 3 of the FEIS. It is the USF&WS's Opinion that the proposed action will not result in jeopardy to the desert tortoise. As part of this Record of Decision the incidental take, terms and conditions, and reporting requirements in the Biological Opinion are adopted as stipulations. If the allowed incidental take of desert tortoise is reached on any single project or in total, all construction will cease and Section 7 consultation will be reinitiated.

7. Approval of authorizations is conditioned upon the CCRFCD obtaining and complying with all Federal, state, county and local permits and approvals; and complying with all applicable Federal, state, county and local laws and regulations. Major authorizing actions include Section 404 permitting through the COE, Section 7 consultation under the Endangered Species Act with the USF&WS, and Section 106 consultation under the National Historic Preservation Act with the SHPO. Facility construction will also require various project-specific permits and approvals such as:

Encroachment Permit from the Nevada Department of Transportation

Construction Permit from the Nevada Division of Water Resources

Conditional Use Permit from the Clark County Commission

Plot and Grading Study from the Clark County Department of Public Works

Off-Site Permit from the Clark County Department of Public Works

Permission to Disturb Topsoil Permit from the Clark County Health District, Air Pollution Control Division

Authority to Construct Certificate from The Clark County Health District

Operating Permit and Source Registration from the Clark County Health District, Air Pollution Control Division

8. The following stipulations, in addition to those previously identified, will be required with all use authorizations concerning the placement of dams upon lands administered by the BLM.

a. All state and local requirements pertaining to the location, construction, maintenance, major repair work, reconstruction, removal, and emergency action plans shall apply as minimum requirements.

b. Design shall be prepared by a Professional Engineer registered in the State of Nevada.

c. Design and Plans stamped for approval with date and signature by the State of Nevada, Department of Conservation and Natural Resources, Division of Water Resources, State Engineer, shall be submitted to the Authorized Officer of the BLM. The Authorized Officer will provide the permittee with approval to commence construction only after receipt of the approved plans and completion of BLM and other required agencies review.

d. Record drawings and the final inspection shall be provided to BLM within 30 days of completion of construction.

e. Any proposed modification to the structure shall be approved by the Nevada State Engineer's Office and a copy of the approved modification submitted to BLM prior to beginning work.

f. Any changes in ownership must be approved by the Authorized Officer of the BLM in the form of a right-of-way assignment in advance of actual transfer to another party. These stipulations shall be a part of any change in ownership and shall be binding upon the legal owner until such time as the structure is removed to the satisfaction of the Nevada State Engineer's Office and the BLM.

g. An official representative of the BLM may at any time inspect the on-site construction, maintenance, and operation of the dam in connection with the use of public land for reservoir purposes. Official representatives of State and other Federal agencies may also inspect such activities if necessary to the performance of official duties which relate to the reservoir. The right to inspect includes the right to use private roads belonging to the permittee in order to reach the site.

h. If an inspection reveals that any damage has occurred to the structure, outlet works, spillway, or appurtenances, the damaged area shall be restored to the originally constructed lines and grades with materials and workmanship equal in quality to original construction. Such repairs shall be completed within 90 days following inspection and written notification.

i. The permittee, prior to initiation of construction, reconstruction, or major maintenance of facilities on the right-of-way which will involve disturbance of the land or use of heavy construction equipment will notify the BLM of their intent to proceed with such work, the date work is to commence, and the name of the delegated representative of the permittee.

j. If the permittee does not perform needed maintenance within 90 days of written notification, BLM will perform the required maintenance and charge the owner for the full cost of this work or; the authorizations previously granted by BLM may be revoked and the structure removed.

k. The permittee shall hold the United States, its officers and employees harmless from and indemnify them against any damage, injury, or liability resulting from the construction, operation, or maintenance of the structure being authorized including but not limited to any liability which the United States may have as owner of the land which is the subject of the authorization.

l. The permittee shall prepare an emergency action plan for retention or detention dams in accordance with BLM standards for each structure with a high or significant hazard classification. The Authorized Officer will determine the hazard classification following an annual inspection of the downstream potential for property damage and/or loss of life.

m. In the event of a breach or major damage in the dam, repair plans shall be submitted by a Professional Engineer registered in the State of Nevada to the State of Nevada for approval. A copy of these plans shall be sent to BLM at the same time. BLM shall also be sent a copy of the approved plans.

n. The specific use authorization shall be deemed a non-exclusive right to use the land of the United States for construction, use, improvement, and maintenance of the dam and reservoir area. The public shall have the right to use the land for all activities allowed on public land which do not interfere with the permittee's right to construct and maintain the dam or the right to store and divert water for beneficial purposes in accordance with the Nevada State water permit.

o. 1) Prior to termination of the authorization, the holder shall contact the Authorized Officer to arrange a pre-termination conference. This conference will be held to review the termination provisions of the authorization.

2) Within a specified time period prior to termination of the authorization, the holder shall contact the Authorized Officer to arrange a joint inspection of the authorization. This inspection will be held to agree to an acceptable termination (and rehabilitation) plan. The Authorized Officer must approve the plan in writing prior to the holder's commencement of any termination activities.

p. The authorization may be renewed. If renewed, it will be subject to regulations existing at the time of renewal, and such other terms and conditions deemed necessary to protect the public interests.

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U.S. Bureau of Land Management
Stateline final environmental
impact statement Clark County

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